

CLAIMS

1- Use of a cyclic peptide comprising the tripeptide forming a binding site of fertilin beta to oocyte integrin in order to increase the fusigenic capacities of a gamete.

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2- Use according to claim 1, wherein the tripeptide is X-(Q/D/E)-E, X being an amino acid.

3- Use according to either of claims 1 or 2, wherein the tripeptide is FEE.

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4- Use according to any one of the previous claims, wherein said peptide has the following formula :



15 where X represents an amino acid, m and n are comprised between 0 and 14 and "TriPept" denotes said tripeptide.

5- Use according to claim 4, wherein m+n is less than 10, preferably less than or equal to 5.

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6- Use according to claim 5, wherein said peptide has the following formula :



where X is an amino acid.

25 7- Use according to claim 6, wherein X is a small and uncharged amino acid, preferably selected in the group consisting of A, S or T.

8- Use according to any one of the previous claims, wherein the cyclic peptide is in the form of a multimer.

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9- Use according to any one of the previous claims, wherein the gamete is an oocyte.

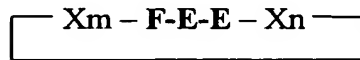
10- Use according to any one of the previous claims, intended to improve in vitro

fertilization.

11- Use according to any one of the previous claims, intended to improve artificial insemination, and/or nuclear transfer in non-human animals.

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12- Cyclic peptide having the following formula :



10 where X represents an amino acid, m and n are comprised between 0 and 14, a variant or a derivative thereof.

13- Cyclic peptide according to claim 12, wherein m+n is less than 10, preferably less than or equal to 5.

15 14- Cyclic peptide according to claim 13, said peptide having the following formula :



where X is an amino acid, X preferably being selected in the group consisting of A, S or T.

20 15- Cyclic peptide according to claim 14, wherein X is S.

16- Multimer of cyclic peptides, said peptides having the following formula :



25 where X represents an amino acid, m and n are comprised between 0 and 14 and "TriPept" designates the tripeptide X-(Q/D/E)-E forming a binding site of fertilin beta to oocyte integrin.

17- Multimer according to claim 16, wherein the tripeptide is FEE.

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18- Multimer according to either of claims 16 or 17, said peptide having the following formula :



where X is an amino acid, X preferably being selected in the group consisting of A, S or T.

19- Composition intended for gamete culture comprising a peptide according to any one
5 of claims 12 to 15 or a multimer according to any one of claims 16 to 18.

20- Use of a peptide according to any one of claims 12 to 15 or a multimer according to
any one of claims 16 to 18 for preparing a medicament intended to treat fertility
problems.

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21- Method for screening compounds increasing the fusiogenic capacity of oocytes
comprising 1) incubating the oocyte in the presence of the test compound; and 2)
evaluating the ability of the compound to increase the fusiogenic capacity of the oocyte.

15 22- Screening method according to claim 21, characterized in that the ability of the
compound to increase the fusiogenic capacity of the oocyte is evaluated by at least one
of the following criteria: binding to the oocyte, induction of adhesion protein
displacement to the oocyte surface (more particularly of integrin $\alpha 6 \beta 1$), fusion of the
oocyte with a spermatozoon.

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